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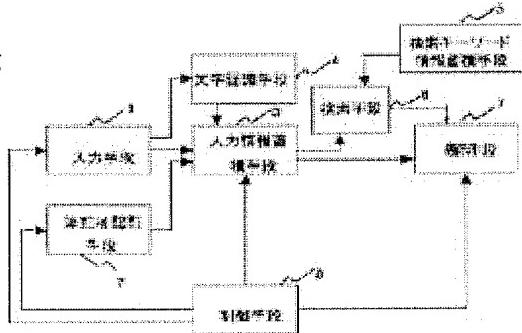
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## (54) HANDWRITING INPUT DISPLAY DEVICE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To solve a problem of being unable to confirm description information due to having no method for obtaining information on a writing information word when browsing writing information because of being difficult to determine falsification and identify a copyist for storing only a character recognizing result in a conventional handwriting input device.

**SOLUTION:** This handwriting input display device has an input information storage means for storing calligraphic information on a handwriting character, a character code from a keyboard and a character recognizing result of the calligraphic information, a predetermined retrieving character string having the possibility of being inputted from an input means, a retrieving keyword information storage means for storing information on the character string and display form control information for controlling a display form to a display means, a retrieving means for outputting the calligraphic information, the character code, and the character recognizing result corresponding to the retrieving character string by retrieving the input information storage means by the retrieving character string, and the display means for displaying a retrieving result on a display device on the basis of the display form control information.



## CLAIMS

### [Claim(s)]

[Claim 1]An input means which has equipment which inputs position information on a handwritten character and outputs handwriting information, and a keyboard, A copyist authentication means which compares information which specifies a copyist inputted from said input means, and copyist specific information stored beforehand, and attests and identifies a copyist, An input accumulation means which stores a character recognition result of a character code from a character recognition means which carries out character recognition of said handwriting information, and outputs a character recognition result, said handwriting information, and a keyboard, and a character recognition means, A search string which might be inputted from said input means and defined beforehand, A retrieval key word information accumulation means which accumulates retrieval key word information which described display style control information which controls a display style to information and a displaying means relevant to the character string, Said input accumulation means is searched with a search string of said retrieval key word information accumulation means, A handwriting input display provided with handwriting information corresponding to this search string, a character code, a search means to output a character recognition result, and a displaying means that displays search results of said search means on a display device based on said display style control information.

[Claim 2]The handwriting input display according to claim 1, wherein a displaying means is provided with a definite means which makes said handwriting information composition which ornaments a predetermined display style and is displayed with a display device, and makes correction of matters described impossible based on an operator's directions by every copyist and writing time based on a copyist authentication means.

[Claim 3]A hand character string detecting means which detects handwriting information stored in an entered first half input accumulation means near the postscript handwriting information is established, The handwriting input display according to claim 1 or 2 having a position compensation means corrected so that position information on inputted handwriting information may not be lapped when said postscript handwriting information laps with a field of said entered handwriting information.

[Claim 4]A coincidence frequency calculating means which asks for word frequency of an input accumulation means, and asks for coincidence frequency between words of a related entry, The handwriting input display according to any one of claims 1 to 3 provided with a word candidate order control means which controls candidate order in a kana-kanji conversion at the time of entering with a keyboard from a word of an existing entry, said word frequency, and coincidence frequency.

[Claim 5]A coincidence frequency calculating means which asks for word frequency of an input accumulation means, and asks for coincidence frequency between words of a related entry, The handwriting input display according to any one of claims 1 to 3 having a word candidate order control means which controls candidate order of a character recognition candidate of a character

recognition means when performing character recognition in a handwriting trace from a word of an existing entry, said word frequency, and coincidence frequency.

## DETAILED DESCRIPTION

### [Detailed Description of the Invention]

#### [0001]

[Field of the Invention] Especially this invention is the best for application to a handwriting electronic chart about a handwriting input display.

#### [0002]

[Description of the Prior Art] As conventional technology which inputs handwriting trace information, there are "the medical information input system and medical information input method" which were shown, for example in JP,9-171528,A, and drawing 18 is this conceptual block diagram. 1 is provided with the reader and keyboard which read the handwriting information showing the temporal change of the coordinates of a character written down in the medical check on a tablet with the pen in a figure, The input means which performs the kana-kanji conversion of the character inputted by the coordinates (the X coordinate, the Y coordinate) and the keyboard of the nib from a reader, and outputs a character code, The character recognition means which 4 carries out character recognition of the character as which it was entered based on said handwriting information, and outputs a recognition result as a character code, and 1000 are medical information accumulation means which save the result of said character recognition means as medical information.

[0003] Drawing 19 is a system configuration figure of conventional technology. The first-medical-examination reception unit in which 2000 receives a first-medical-examination patient based on the handwriting data detected with the terminal for first-medical-examination patients in a figure, The medical examination unit in which, as for 2001, a medical practitioner etc. diagnose a patient, the pay counter unit in which 2002 makes payment of a health care cost, The chemist's shop unit in which 2004 performs preparation according to a prescription, the inspection unit in which 2005 conducts a biopsy etc., It is a block reception unit in which 2006 receives the patient in a radiation unit, a radiation unit in which 2007 conducts radiographic inspection etc., and a clinical recording storage unit in which 2003 keeps registers, such as a clinical recording, and each unit, such as this, possesses a display device in each, and the input means 1 is equipped with it. 2008 is a central processing unit which manages said each unit, and also has the character recognition means 4 and the medical information accumulation means 1000. Drawing 20 is a format of a receiving slip which a patient fills in in the first-medical-examination reception unit 2000.

[0004] Next, operation is explained. First, the input means 1 are the first-medical-examination reception unit 2000, the medical examination unit 2001, the inspection unit 2005, the pay counter unit 2002, the chemist's shop unit 2004, the radiation unit 2007, and the block reception unit 2006, The coordinates (an X coordinate, a Y coordinate) of a nib are acquired from the reader which reads the handwriting information showing the temporal change of the coordinates of the nib in

the character as which it was entered with the pen on the medical check by regular format, respectively in regulation sampling time.

[0005]The character recognition means 4 performs character recognition based on said handwriting information, and outputs the text code which is a recognition result. When there is furthermore fear of erroneous recognition by the character recognition means 4, warning is given to an operator, and it corrects. In the medical information accumulation means 1000, medical information is accumulated in memory storage, such as a hard disk, based on the slip format used in said each unit, and said character recognition result. For example, the recognition result of the handwriting information written down in the name column of the receiving slip shown in drawing 20 in a first-medical-examination reception unit is saved to the patient name record within the medical information accumulation means 1000.

[0006]Handwriting trace information is inputted and there is "input device" shown, for example in JP,11-196226,A as another conventional technology which accumulates and displays handwriting information. The input means which drawing 21 is this block diagram and was provided with the reader which reads the handwriting information showing the temporal change of the coordinates of the character as which 3000 was filled in on checks, such as a tablet, with the pen in the figure, and the keyboard which performs a character input etc., The input accumulation means in which 3 accumulates said handwriting information, and 7 are displaying means displayed on the display device which does not illustrate the information stored in said input accumulation means 3.

[0007]Next, operation is explained. First, the input means 3000 reads the coordinates (an X coordinate, a Y coordinate) of a nib in the reader which reads the handwriting information showing the temporal change of the coordinates of the nib on a check in regulation sampling time. Or a character is inputted from a keyboard and the kana-kanji conversion of the inputted character is performed. In the input accumulation means 3, handwriting information is accumulated in memory storage, such as a hard disk, based on said input. In the displaying means 7, it displays with the display device which does not illustrate the handwriting information within said input means accumulation means 3.

[Problem to be solved by the invention]

[0008]In the conventional handwriting input device, in order to accumulate only a character recognition result as mentioned above, there were a judgment of an alteration and a problem that it was difficult to identify a copyist. In order that there might be no method of recognizing whether a writing portion is an autograph, there was a problem [ which clarifies responsibility and keeps it / "a guarantee of bona fides" ] of not being enough. There was a problem which there is no method of acquiring the information relevant to the word of entry information when perusing entry information, the check of the described information cannot be performed, but leads to a malpractice etc.

[0009]There was a problem that the efficiency in candidate selection of the character recognition result at the time of carrying out character recognition of selection of the candidate in the kana-kanji conversion in a keyboard input and the handwriting information was bad. When carrying out postscript entry, there was also a problem of inspection nature being unable to fall by trying

to write in inputted spacing and writing a character writing sequence small, or overlapping with a character writing sequence and it becoming impossible to decipher entry information.

[0010]

[Means for solving problem]The handwriting input display concerning this invention inputs the position information on a handwritten character, The input means which has equipment which outputs handwriting information, and a keyboard, the copyist authentication means which compares the information which specifies the copyist inputted from said input means, and the copyist specific information stored beforehand, and attests and identifies a copyist, The input accumulation means which stores the character recognition result of the character code from the character recognition means which carries out character recognition of said handwriting information, and outputs a character recognition result, said handwriting information, and a keyboard, and a character recognition means, The search string which might be inputted from said input means and defined beforehand, The retrieval key word information accumulation means which accumulates the retrieval key word information which described the display style control information which controls the display style to the information and displaying means relevant to the character string, Said input accumulation means is searched with the search string of said retrieval key word information accumulation means, and it has the handwriting information corresponding to this search string, a character code, a search means to output a character recognition result, and a displaying means that displays the search results of said search means on a display device based on said display style control information.

[0011]The handwriting input display concerning this invention is provided with a definite means by which a displaying means makes said handwriting information the composition which ornaments a predetermined display style and is displayed with a display device, and makes correction of matters described impossible based on an operator's directions based on a copyist authentication means by every copyist and writing time.

[0012]The handwriting input display concerning this invention, When the hand character string detecting means which detects the handwriting information stored in the entered first half input accumulation means near the postscript handwriting information is established and said postscript handwriting information laps with the field of said entered handwriting information, it has a position compensation means corrected so that position information on inputted handwriting information may not be lapped.

[0013]The handwriting input display concerning this invention, It has a word candidate order control means which controls the candidate order in the kana-kanji conversion at the time of entering with a keyboard from the word of the coincidence frequency calculating means which asks for the word frequency of an input accumulation means, and asks for the coincidence frequency between the words of a related entry, and an existing entry, said word frequency, and coincidence frequency.

[0014]The handwriting input display concerning this invention, It has a word candidate order control means which controls the candidate order of the character recognition candidate of a character recognition means for the character recognition in a handwriting trace at the time of a

deed from the word of the coincidence frequency calculating means which asks for the word frequency of an input accumulation means, and asks for the coincidence frequency between the words of a related entry, and an existing entry, said word frequency, and coincidence frequency. [0015]

[Mode for carrying out the invention] Embodiment 1. drawing 1 is a figure showing the composition of this embodiment of the invention 1. In a figure, acquire 1 from the tablet etc. which do not illustrate the position information on a pen as handwriting information, and it outputs handwriting information, The input means which carries out the kana-kanji conversion of the input character code from a keyboard etc., and outputs keyboard input information, The copyist authentication means which 2 performs attestation of the user ID and the password which were entered from the terminal etc. which are not illustrated, and outputs copyist ID, and the handwriting information by which 3 was obtained from the tablet of said input means, etc.. It is an input accumulation means which stores copyist ID obtained by the writing time it was considered that was the data similarly inputted from the keyboard of the input means, and the time which took notes of the time from the clock equipment etc. which are not illustrated, and said copyist authentication means.

[0016]The character recognition means which 4 carries out character recognition of the handwriting information from the input means 1, and outputs a character code, The retrieval key word information accumulation means which accumulates the information by which 5 controls the display style of a retrieval key word and this retrieval key word, The displaying means displayed on a search means by which 6 searches the character code within the input accumulation means 3 with the keyword of said retrieval key word information accumulation means, the terminal which does not illustrate the handwriting information by which 7 was stored in said input accumulation means 3, etc., and 8 are control means which control said each means.

[0017]Drawing 2 is an explanatory view showing an example of the accumulation form of the retrieval key word in the retrieval key word information accumulation means 5, an attribute, and attribute attendant information. As for 115, in a figure, an attribute and 117 are attribute attendant information a retrieval key word and 116. Drawing 3 is a display example of the handwriting information in the displaying means 7. The field where 110 displays a chief complaint in a figure, the field where 111 displays a view, The field where 112 displays treatment, the handwriting information on which the "ABC hospital director" wrote down 113, The word "acquired immunodeficiency syndrome" with which 114 was searched, the underline which shows that 115 is URL, the display example of the supplementary information of the word "medicine AB lock" with which 116 was searched, and 117 are the display examples of the warning information of the searched word "urgent."

[0018]Next, operation is explained with reference to the flow chart of drawing 4. Only when in agreement [ it compares with the user ID beforehand stored in the system, and that of a password, and ], as the copyist authentication means 2 acquires the user ID and the password which an operator enters at Step S100, and the input in a system can be performed, copyist ID is outputted to the control means 8. In this embodiment, copyist ID and user ID presuppose that it is the same. The copyist authentication means 2 sends out this copyist ID to the input accumulation

means 3. The control means 8 inputs the collation coincidence information on user ID and a password from the copyist authentication means 2, and sends out an input enabling signal to the input means 1. In the input means 1, input preparations of input are made according to an input enabling signal.

[0019]The input means 1 inputs an operator's handwriting information at Step S101, and it sends out to the input accumulation means 3. Handwriting information is a position information sequence of the pen sent out from the tablet which is not illustrated, combines this handwriting information and writing time, and sends them out to the input accumulation means 3 here. At Step S102, the input accumulation means 3 combines said copyist ID, and accumulates said handwriting information and writing time.

[0020]It is directed at Step S103 that the control means 8 performs character recognition of the handwriting information acquired from the input means 1 to the character recognition means 4. In the character recognition means 4, character recognition is performed from this handwriting information, and a character code is outputted to the input accumulation means 3. Character recognition uses here the character recognition system given in an "on-line character reader" shown in JP,10-247221,A.

[0021]The direction of each segment, length, and the focus are extracted after changing into the segment which carried out polygonal line approximation of the handwriting information specifically acquired by the input accumulation means 3, matching with the letter segment in a dictionary within the character recognition means 4 and an input letter segment is performed, and distance is found. The characteristic information of the section determined by the focus group on the input character pattern corresponding to the focus group of the character in a dictionary is extracted as a corresponding stroke feature, the distance of the computed corresponding stroke feature and the distance of segment matching are used together, and a candidates-characters code is outputted to the input accumulation means 3. Furthermore the position information on a character is combined and it outputs to the input accumulation means 3. Said input accumulation means 3 stores as similarity the reciprocal of the first half distance value of the candidates-characters code which said character recognition means 4 outputted, and a corresponding candidate, and matches and stores the position information and this handwriting information of a character.

[0022]At Step S104, when displaying input on the search means 6 by the displaying means 7, it is directed that this input is acquired from the input accumulation means 3, and the control means 8 performs retrieval by keyword. The search means 6 obtains the keyword appointed beforehand from the retrieval key word information accumulation means 5, and carries out retrieval by keyword from this input. The attribute and attendant information which gave search results to the character position (they are the coordinates in the case of handwriting information) of input and the retrieval key word are outputted to the control means 8. By the retrieval key word information accumulation means 5, the retrieval key word appointed beforehand and its attribution information are created, and it saves here. A text editor etc. describe this attribution information. Retrieval key word information describes one keyword to one line, and comprises the information

117 accompanying the retrieval key word 115, the attribute 116, and an attribute.

[0023]At Step S105, when the keyword searched in the input accumulation means 3 exists, it is directed that the control means 8 displays on the displaying means 7 based on the attribute and attendant information of a retrieval key word.

[0024]Attribution information explains operation of the displaying means 7 about supplementary information, warning information, URL, and the case of being non-display. When the attribution information of this retrieval key word is supplementary information, it displays near [ search string ] this by making attendant information of the attribute of the 3rd column into a character string. For example, in the case where a retrieval key word is a "medicine AB lock", it blows off near this handwriting information, the viewing area 116 is formed, and attendant information is displayed in this blow-off field. When the attribution information of this retrieval key word is warning information, this search string is displayed by the character attribute described to the information to which the attribute of the 3rd column attaches.

[0025]For example, by the case where a retrieval key word is 117 "urgently", the character color which is the character attribute of attendant information is drawn in red, and the thickness of a drawing line is drawn at 4 pixels. When the attribution information of this retrieval key word is URL, an underline is given to this search string by setting to URL the character string described to the information to which the attribute of the 3rd column attaches, and it is considered as the hyperlink to this URL. For example, in the case where a retrieval key word is "acquired immunodeficiency syndrome" 114, the underline 115 is drawn in the lower part of this handwriting information. Although the case where it referred to this embodiment by one retrieval key word was shown, it may be made to search according to AND and the OR condition of two or more retrieval key words.

[0026]As mentioned above, since input was displayed based on the retrieval key word information which searched the display document and was beforehand defined about the applicable search string by the search string defined beforehand, A visitor's attention can be called now about input, a clerical error can be checked easily, and a malpractice can be reduced. Since it is carrying out fixed [ of the display action ] for retrieval key word information, customization of changing into a different display attribute becomes easy.

[0027]In the embodiment 2. book embodiment 2, a displaying means based on an entry person authentication means Every entry person. By writing time, the color, closing line, underline, etc. of a color, thickness, and a background are ornamented, said handwriting information is displayed with display devices, such as a terminal, and the definite means keep correction of matters described from being possible based on an operator's directions of is formed.

[0028]Drawing 5 is a figure showing the composition of this embodiment of the invention 2. The displaying means as which 7 ornaments the color, closing line, underline, etc. of a color, thickness, and a background, and displays said handwriting information with display devices, such as a terminal, by every entry person and writing time based on an entry person authentication means in a figure, 9 is a definite means keep correction of matters described from being possible based on an operator's directions of, and 1-6, and 8 are the same means as Embodiment 1, and they

carry out the same operation.

[0029] Drawing 6 is an example of the hand display property table for determining the display style of handwriting information based on copyist ID in said displaying means 7. The sequence 120 indicates copyist ID to be in a figure, the sequence 121 indicates a hand display property to be, The sequence 122 indicates attributes, such as office organization, to be, and 123 take the value 10 by copyist ID of the "ABC hospital director", It is a hour entry 124 takes the display style of the handwriting information in said copyist ID, 125 takes the value 12 by copyist ID of "ABC hospital reception", 126 shows the display style of the handwriting information in said copyist ID, and 127 indicates the attended time of the copyist of a consultation day to be.

[0030] Drawing 7 is a display example of the handwriting information in a displaying means, and is a figure explaining operation of a displaying means. The drawing color on which "ABC hospital reception" wrote [ the drawing color on which the "ABC hospital director" wrote down 130 in the figure ] down the handwriting information of 1 and 131 black in thickness is [ thickness ] the handwriting information of 3 black. Drawing 8 is a flow chart explaining operation of the displaying means of this embodiment, and drawing 9 is a flow chart explaining operation of the definite means of this embodiment.

[0031] Operation of the displaying means 7 is explained using drawing 6 – 8. The displaying means 7 obtains copyist ID120 within the input accumulation means 3 at Step S110. The hand display property which displays the handwriting information of this copyist ID from the hand display property table 121 by said copyist ID at Step S111 is obtained. When copyist ID of this time plurality exists, attribution information is referred to with this copyist ID. For example, when copyist ID is 10, there are "ABC hospital director , 10:30 – 17:00" with the "ABC hospital director", and attribution information judges to any it corresponds based on the hour entry of aforementioned the "10:30 – 17:00" 127.

[0032] The handwriting information 130 which said medical practitioner wrote down on the aforementioned a "chief complaint" field, and the handwriting information 131 which reception took notes of are explained to an example. Copyist ID123 of this medical practitioner is obtained from the input accumulation means 3, it searches from 123 of the copyist ID sequence of a hand display property table, and this medical practitioner's hand display property 124 is outputted. About the handwriting information 131, the hand display property 126 of this reception is similarly obtained from copyist ID122 of reception. Based on said hand display property, handwriting information is expressed as Step S112. Based on this hand display property 124, a medical practitioner's handwriting information 130 makes thickness of black and a drawing line 1 pixel, and, specifically, displays a drawing color. Similarly, based on this hand display property 126, the handwriting information 131 of reception makes thickness of black and a drawing line 3 pixels, and displays a drawing color.

[0033] Next, operation of the definite means 9 is explained using the flow chart of drawing 9. An operator (an administrator or a medical practitioner) is prevented from correcting data, in order to avoid an alteration about medical information, such as inputted handwriting information. An operator expresses first the contents of writing which are medical examination information to the

displaying means 7 as Step S120. At Step S121, an operator pushes the determination button displayed on the terminal etc. which will not be illustrated if there is no doubt about display information. At Step S122, a definite signal is sent out to the control means 8. The control means 8 sends out a definite signal to the definite means 9. The definite means 9 gives the flag which reads about this writing information and permits a chisel, and sends it out to the input accumulation means 3.

[0034] Since the hand display property which is a display attribute based on a hand person and writing time about the contents of writing as mentioned above is chosen and it was made to display, Since an inspection is possible only paying attention to its entry content when performing a definite act so that an alteration cannot perform input, the working efficiency of a definite act can be raised, since the information inputted in addition to the time zone and consultation day which are not at their desk since it can display based on writing time can be distinguished easily — the person himself/herself — the person of an except performs password surreptitious use, and also when alteration acts, such as an input which become the person himself/herself and is cleared up, are made, it can inspect easily.

[0035] When having added handwriting trace information, and an existing input string and a field lapped and were inputted, the embodiment 3. book embodiment 3 amended the position of the existing input string position so that it might be legible. Drawing 10 is a block diagram showing the composition of Claim 3 of this invention. The position compensation means in which whether, as for 10, the input string position has lapped with the existing input string in the figure, the hand character string detecting means to judge, and 11 amend the coordinates position of an existing input string when the input string position has lapped with the existing input string, and 1–9 are the same composition as Embodiment 2, and they carry out the same operation.

[0036] Drawing 11 is a figure explaining operation of the hand character string detecting means of this embodiment. In a figure, the entry position where 140,141 newly tends to add inputted handwriting information and 142, the field where 143 circumscribes the handwriting information 140, the field where 144 circumscribes the handwriting information 141, the handwriting information which added 145 to the entry position 142, and 146 are fields which circumscribe the handwriting information 145. Drawing 12 is a figure explaining operation of the position compensation means of this embodiment. In a figure, the duplication length of the direction of Y with the field 146 of the handwriting information 145 which 147 added with the field 143 of the handwriting information 140, and 148 are the duplication length of the direction of Y of the field 144 of the handwriting information 141, and the field 146 of the handwriting information 145 added as a postscript. Drawing 13 is a flow chart explaining operation of the hand character string detecting means 10 of this embodiment, and the position compensation means 11.

[0037] Operation of the hand character string detecting means 10 and the position compensation means 11 is explained using drawing 11 – 13. The control means 8 is controlled by Step S130 to output the input within the input accumulation means 3, and the input of the input means 1 to the hand character string detecting means 10, when there is input by the input means 1. The handwriting information of the input means 1 laps with an existing input string, or the hand

character string detecting means 10 detects. When handwriting information laps, it progresses to Step S131, and this processing is ended when not lapping.

[0038]It considers that the handwriting information notes of was taken in succession within between certain existing scheduled time is one field, and let the rectangular area expressed with maximum X and the Y coordinate of this handwriting information, and minimum X and a Y coordinate be area circumscribing. When the area circumscribing of handwriting information laps, the hand character string detecting means 10 searches for the lap of the field of the input handwriting information within the input accumulation means 3, and the input handwriting information of the input means 1 with the coordinates of the direction of Y. It asks for lap height Y of the direction of Y with the area circumscribing with which it laps first in this handwriting information and the upper part. For example, lap height is found in several 1 and it judges with lapping, when lap coordinates are larger than 0. Next, the lap height of the direction of Y with the area circumscribing with which it laps in this handwriting information and a lower part is found. For example, lap Y' coordinates are searched for in several 2, and it judges with lapping, when lap height is larger than 0.

[0039][an one number] --  $Y = -Y_0 + (Y_{-1} + H_{-1})$  -- the height of the hand block which is above the area circumscribing which the upper left corner Y coordinate of the area circumscribing which is above the area circumscribing which the upper left corner Y coordinate of the area circumscribing which  $Y_0$  added here, and  $Y_{-1}$  added, and  $H_{-1}$  added, and Y are lap height.

[0040][-- a number -- two --] -- Y -- ' -- = - Y -- \_one -- -- + ( $Y_0 + H_0$ ) -- here -- Y -- \_zero -- -- having added a postscript -- area circumscribing -- the upper left -- a corner -- a Y coordinate -- H -- \_zero -- -- having added a postscript -- area circumscribing -- height -- Y -- \_one -- -- having added a postscript -- area circumscribing -- caudad -- it is -- area circumscribing -- the upper left -- a corner -- a Y coordinate -- Y -- ' -- a lap -- height -- it is .

[0041]It laps with that of the area circumscribing 146 of the handwriting information 145, and the area circumscribing 143 of the inputted handwriting information 140 which was specifically added, and judges with the area circumscribing 146 of the handwriting information 145, the area circumscribing 144 of the inputted handwriting information 141, and a lap. Next, it laps with that of the area circumscribing 146 and the area circumscribing 143 of the inputted handwriting information 140, and the height 147 is found, it laps with the area circumscribing 146 and the area circumscribing 144 of the inputted handwriting information 141, and the height 148 is found.

[0042]It is directed that the control means 8 amends the position of the handwriting information within the input accumulation means 3 to the position compensation means 11 at Step S132 when a hand block area laps in said hand character string detecting means 10. The position compensation means 11 amends the position coordinate of this input handwriting information, and the position coordinate of all the handwriting information which exists in the direction of + from the Y coordinate lower end of this input handwriting information according to the lap of the field of said hand block. The Method of amendment of a position coordinate is performed in several 3, for example according to said lap coordinates. The handwriting information after position amendment is outputted to the input accumulation means 3. The input accumulation means 3 transposes this

handwriting information after amendment to this handwriting information.

[0043][a three number] --  $Y_i$  -- ' $= Y_i + Y + Y'$ , however  $Y_0' = Y_0 + Y$  -- lap height which asked for  $Y$  coordinate,  $Y$ , and  $Y'$  of the  $i$ -th handwriting information that  $Y_i$  has caudad from a hand block of this input handwriting information here by said hand character string detecting means 10. upper left corner  $Y$  seat \*\* after amendment of area circumscribing which an upper left corner  $Y$  coordinate of area circumscribing where  $Y_0$  added  $Y_i'$  by a position  $Y$  coordinate after amendment, and  $Y_0'$  added -- certain \*\*

[0044]Although all the handwriting information was targeted for amendment of a position coordinate of handwriting information in this embodiment, it may be made to consider it only as handwriting information by which decision made by Embodiment 1 was made. Although a lap of only the direction of  $Y$  is authorized, when detecting by the hand character string detecting means 10 similarly about a lap of the direction of  $X$ , and not lapping with inputted handwriting information, and it specifically ranks with a transverse direction of inputted handwriting information, it may not be made not to perform position amendment.

[0045]As mentioned above, since a position of an existing input string was amended when carrying out postscript entry and lapping with an approaching character string, it can be made legible at the time of an inspection. An alteration of carrying out overwrite to having existing inputted or fixed handwriting information by postscript entry intentionally can be prevented.

[0046]A coincidence frequency calculating means which asks for coincidence frequency between words of a view and a treatment item which a word which described an embodiment 4. book embodiment 4 to a chief complaint, and a medical practitioner inputted, Candidate order in a kana-kanji conversion at the time of filling in a view, a plan, etc. by a keyboard etc. from said word frequency and coincidence frequency was controlled by a word candidate order control means from a word described to a chief complaint.

[0047]Drawing 14 is a block diagram showing composition of this embodiment of the invention 4. A coincidence frequency calculating means which asks for coincidence frequency between words of a view and a treatment item as which a word for which it asked, and which was described to a chief complaint, and a medical practitioner inputted word frequency as which a medical practitioner inputs 12 in a figure, 13 is a word candidate order control means which controls candidate order in a kana-kanji conversion at the time of filling in a view, a plan, etc. by a keyboard etc. from said word frequency of a word described to a chief complaint, and coincidence frequency. 1-8 carry out the same composition as Embodiment 1, and same operation.

[0048]Drawing 15 is a figure explaining operation of a word candidate order control means. A word 1201-1203 were described to be by chief complaint in a figure, and 1204 are the words described by a plan, treatment, etc., and frequency at the time of 1205 being described to be a "headache" by chief complaint and being described as a "packing sheet" by a plan, treatment, etc. is shown.

Drawing 16 is a figure explaining operation of the candidate order control means 13. In a figure, a word candidate in a kana-kanji conversion and 1301 1300 Said word candidate's frequency in use, Frequency in a pair of a word 1302 was described to be by this word candidate and chief complaint, and 1303 are candidate order to which overall evaluation value and 1304 rearrange into

high order of said overall evaluation value said evaluation value and a value which added frequency of a word pair together.

[0049]Operation of the coincidence frequency calculating means 12 is explained. A word is extracted from a character string entered in a chief complaint, a view, etc. An extracted word is beforehand registered into a dictionary, for example. Word extraction by a morphological analysis given in said dictionary and document "natural-language-processing-foundation and application -" (the Tanaka \*\*\*\* editorial supervision and edited by Institute of Electronics, Information and Communication Engineers) is performed, and a word is outputted. It asks for coincidence frequency from said extracted word entered in a chief complaint, and said extracted word entered in other view, treatment, etc. It asks for coincidence frequency as follows, for example. When there are an extracted word "word 1" of a chief complaint and extracted words "word 2", such as other view, treatment, etc., "the word 1", frequency of a pair of - "word 2" is made to increase one time. In what has a high rate predicted that other view, treatment, etc. are filled in, said frequency becomes high when a chief complaint has "the word 1." For example, "membrum inferius" can consider that probability that frequency of a pair of "low back pain" - "visible" will be entered in other view, treatment, etc. by 0 when frequency of a pair of "low back pain" - "membrum inferius" is 30 is higher than "it is visible."

[0050]Next, operation of the candidate order control means 13 is explained. The candidate order control means 13 is rearranged into order with high frequency where kana-kanji conversion ranking is filled in, from a word extracted from a character string entered in a chief complaint as said coincidence frequency. A case where it is concretely described as "low back pain" by chief complaint, and "membrum inferius" is inputted is explained. The overall evaluation value 1303 is calculated from 1300, its frequency 1301, and the frequency 1302 of a pair of said candidate word and a word of "low back pain" as a result of a kana-kanji conversion. As for the overall evaluation value 1303, frequency of a candidate word "visible" is set to 100 when word pair frequency is 0 in 100. The overall evaluation value 1303 is similarly calculated about a word candidate of all the kana-kanji conversions. Finally it rearranges into high order of overall evaluation value for said every word candidate.

[0051]As mentioned above, input efficiency can be raised because a suitable word candidate comes to a higher rank by asking for the coincidence frequency of the word entered in the chief complaint, and the word filled in with a view, a plan, etc., and controlling the candidate order of Chinese character conversion according to a chief complaint.

[0052]embodiment 5. -- the composition of this embodiment of the invention 5 is the same as that of Embodiment 4. Drawing 17 is a figure explaining operation of the candidate order control means 13. The word candidate of a result who has recognized 1400 by the character recognition means 4 in a figure, and 1401 Said word candidate's evaluation value, The frequency in the pair of the word 1402 was described to be by this word candidate and the chief complaint, the overall evaluation value in which 1403 added together said evaluation value and the frequency of the word pair, and 1404 use high order of said overall evaluation value with candidate order.

[0053]Next, operation of a candidate order control means is explained. The candidate order

control means 13 is rearranged into order with high frequency where the character recognition result ranking which the character recognition means 4 outputted from the word extracted from the character string entered in the chief complaint as said coincidence frequency is filled in. The case where it was concretely described as a "headache" by the chief complaint, and is described as a "medicine DB lock" is explained. Let what carried out division process of the total of the similarity which made this the word candidate, and for which compared with the dictionary which stored the detection word beforehand defined from the candidate of the character unit of the character recognition means 4, and asked for two or more candidates in whom a detection word may be contained, and it asked by individual character recognition by word length be an evaluation value. The overall evaluation value 1403 is calculated from the frequency of the pair of 1400, its evaluation value 1401 and said word 1400, and the word of a "headache" as a result of a word unit. As for the overall evaluation value 1403, the evaluation value of a medicine AB lock is set to 105 when word pair frequency is 5 in 100. The overall evaluation value 1403 is calculated about the word candidate who asked from the result of all the character recognition means 4 similarly. Finally it rearranges into the high order of overall evaluation value for said every word candidate.

[0054]As mentioned above, character recognition precision can be raised because a suitable word candidate comes to a higher rank by asking for the coincidence frequency of the word entered in the chief complaint, and the word filled in with a view, a plan, etc., and controlling the candidate order of the character recognition result of a character recognition means according to a chief complaint.

[0055]

[Effect of the Invention]Since input was displayed based on the retrieval key word information which searched input and was beforehand defined about the applicable search string by the search string defined beforehand according to this invention, Based on retrieval key word information, mind can be evoked now to a visitor about input, and a clerical error can be checked easily. Since it is carrying out fixed [ of the display action ] for retrieval key word information, customization of changing into a different display attribute becomes easy.

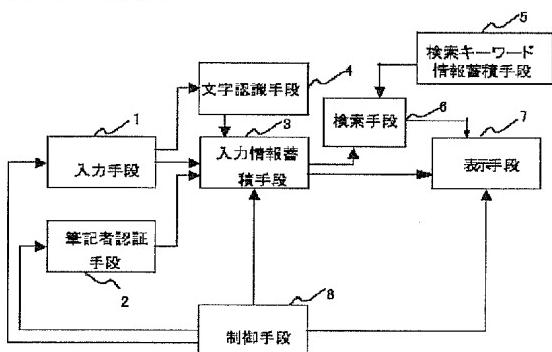
[0056]Since the contents of writing were displayed by the predetermined display style based on a hand person and writing time according to this invention, Since an inspection is possible only paying attention to its entry content when performing a definite act so that an alteration cannot perform input, the working efficiency of a definite act can be raised, the information inputted in the time zone which is not at its desk since it can display based on writing time can be easily distinguished now -- the person himself/herself -- the person of an except performs password surreptitious use, and also when alteration acts, such as an input which become the person himself/herself and is cleared up, are made, it can inspect easily.

[0057]According to this invention, since the position of the existing input string was amended when carrying out postscript entry and lapping with the approaching character string, it can be made legible at the time of an inspection. The alteration of carrying out overwrite to having existing inputted or the fixed handwriting information by postscript entry intentionally can be prevented.

[0058]According to this invention, input efficiency can be raised because a suitable word candidate comes to a higher rank by asking for the coincidence frequency of the word entered in the chief complaint, and the word filled in with a view, a plan, etc., and controlling the candidate order of Chinese character conversion according to a chief complaint. According to this invention, character recognition precision can be raised because a suitable word candidate comes to a higher rank by asking for the coincidence frequency of the word entered in the chief complaint, and the word filled in with a view, a plan, etc., and controlling the candidate order of the character recognition result of a character recognition means according to a chief complaint.

## DRAWINGS

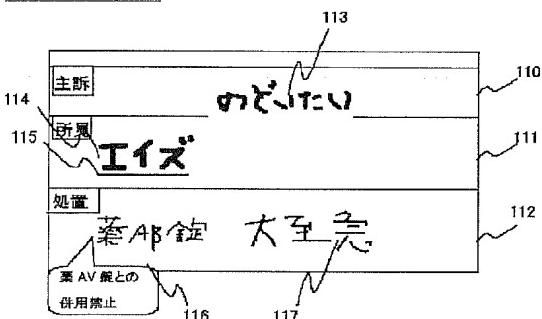
[Drawing 1]



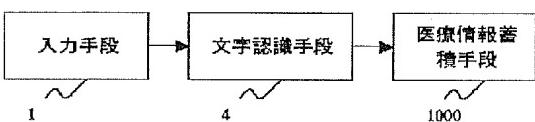
[Drawing 2]

業AB録	115	補足情報	116	“業AV録との併用禁止”	117
大至急		警告情報		文字色=赤、太さ=4	
エイズ		URL		http://www.sample.com	
秘密		非表示			

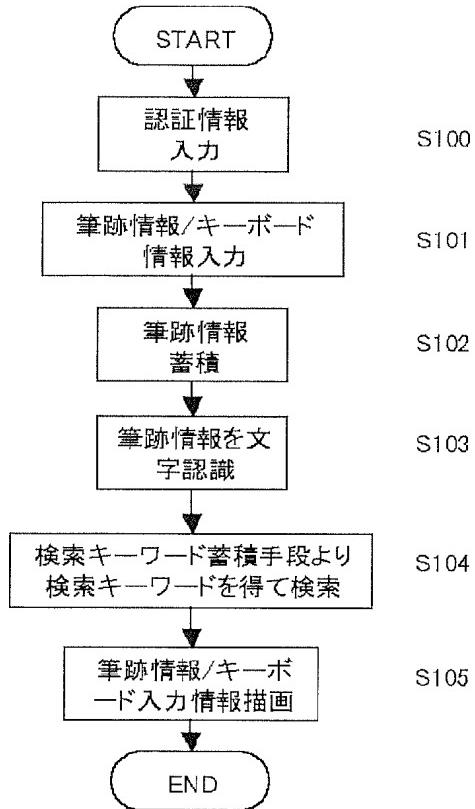
[Drawing 3]



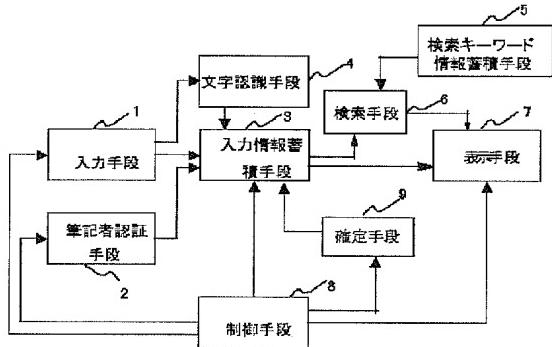
[Drawing 18]



[Drawing 4]



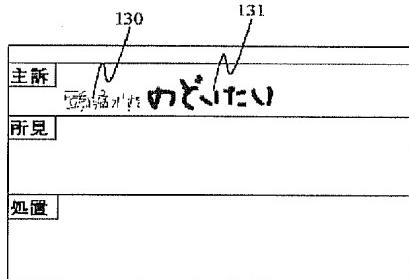
[Drawing 5]



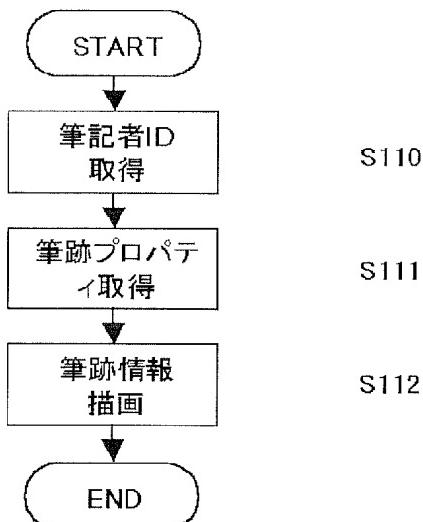
[Drawing 6]

筆記者 I D	筆跡表示プロパティ	属性情報
10	黒・太さ=1	ABC 医院 院長
10	赤・太さ=4	ABC 医院 院長, 10:30-17:00
11	黒・太さ=3・下線	ABC 医院 医師
12	黒・太さ=3	ABC 医院 受付
22	緑・太さ=1	ABD 医院 医師
31	黄色・太さ=1	ABE 医院 院長

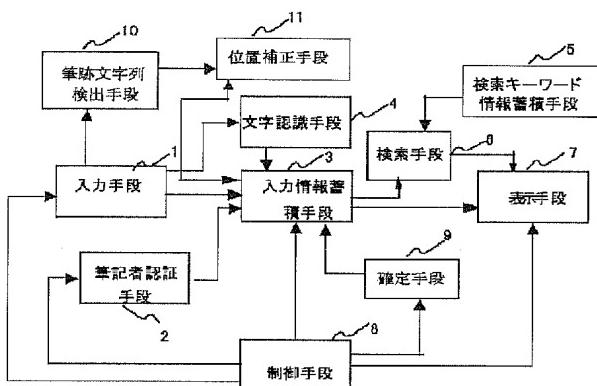
[Drawing 7]



[Drawing 8]



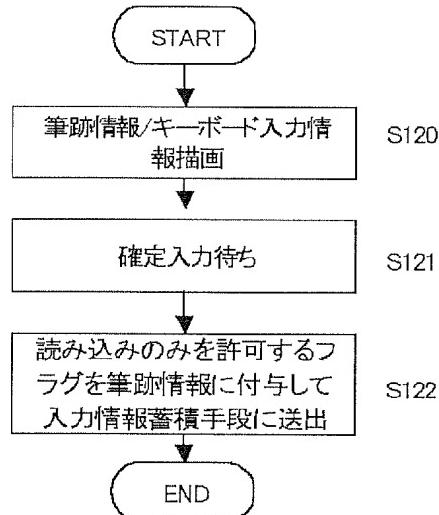
[Drawing 10]



[Drawing 16]

	1300 単語候補	1301 頻度	1302 単語ペア頻度	1303 総合評価値	1304 最終順位
可視	100		0	100	2
下肢	98		30	128	1
..	..		..	..	..
..	..		..	..	..

[Drawing 9]



[Drawing 11]

主訴	脳卒中発作の可能性
所見	
処置	薬物投与と検査 状況に変化なし

140  
142  
141

主訴	脳卒中発作の可能性
所見	
処置	薬物投与と検査 状況に変化なし

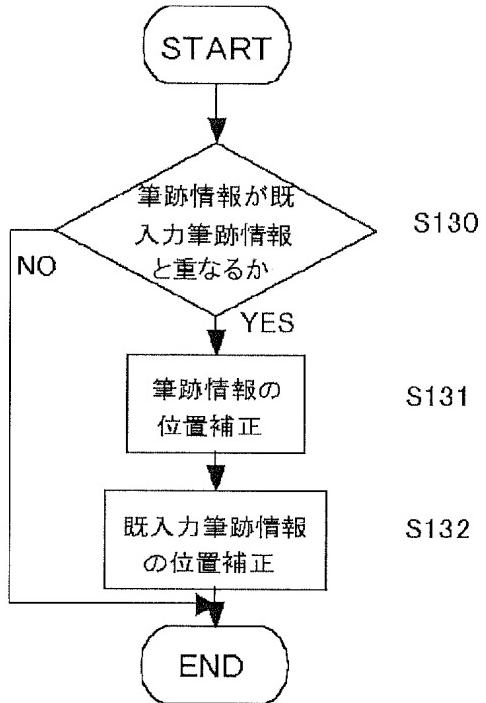
143  
148  
144  
145

[Drawing 12]

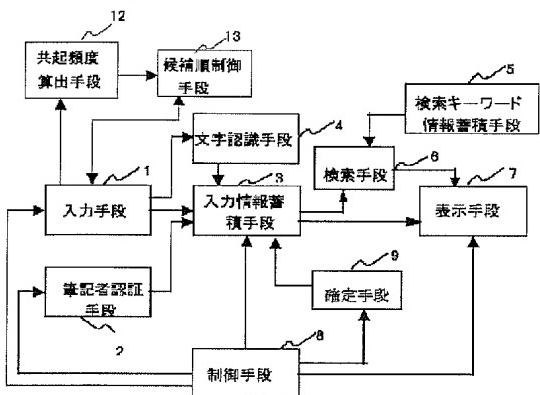
薬物投与と検査  
状況に変化なし

147  
148

[Drawing 13]



[Drawing 14]



[Drawing 15]

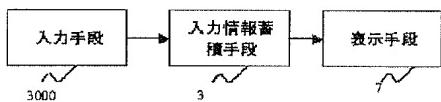
症状など	のど	頭痛	扁桃腺	…	…	…	腰痛
下肢	0	2	0	…	…	…	30
可視	1	2	0	…	…	…	0
…							
湿布	0	0	0	…	…	…	30

Below the table, labels 1201, 1202, 1203, 1204, and 1205 are positioned above and below the table rows.

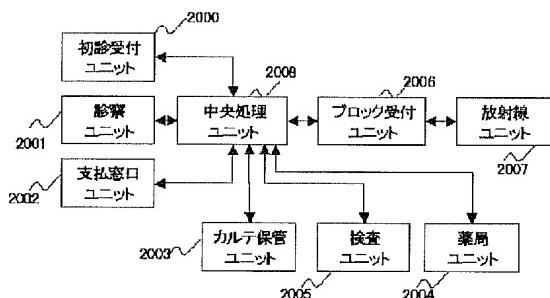
[Drawing 17]

単語候補	評価値	単語ペア頻度	総合評価値	最終順位
葉 AB 韓	100	5	105	2
葉 DB 韓	98	20	118	1
..	..	..		..
..	..	..		..

[Drawing 21]



[Drawing 19]



[Drawing 20]

診療申込書	
患者氏名	
患者住所	
勤務先	